KORLOY
TECH-NEWS

Pro-X Mill

Milling Tool for High Quality Aluminum Machining

- **Clamping system for high speed**
  Strong clamping due to the concave design of insert bottom
- **Chip breaker 3-dimensional design for low cutting load**
  The buffed surface of insert creates excellent chip flow and reduces built-up edges.

KORLOY

Pro-X Mill for Aluminum Milling

Insert

Cutter

Shank

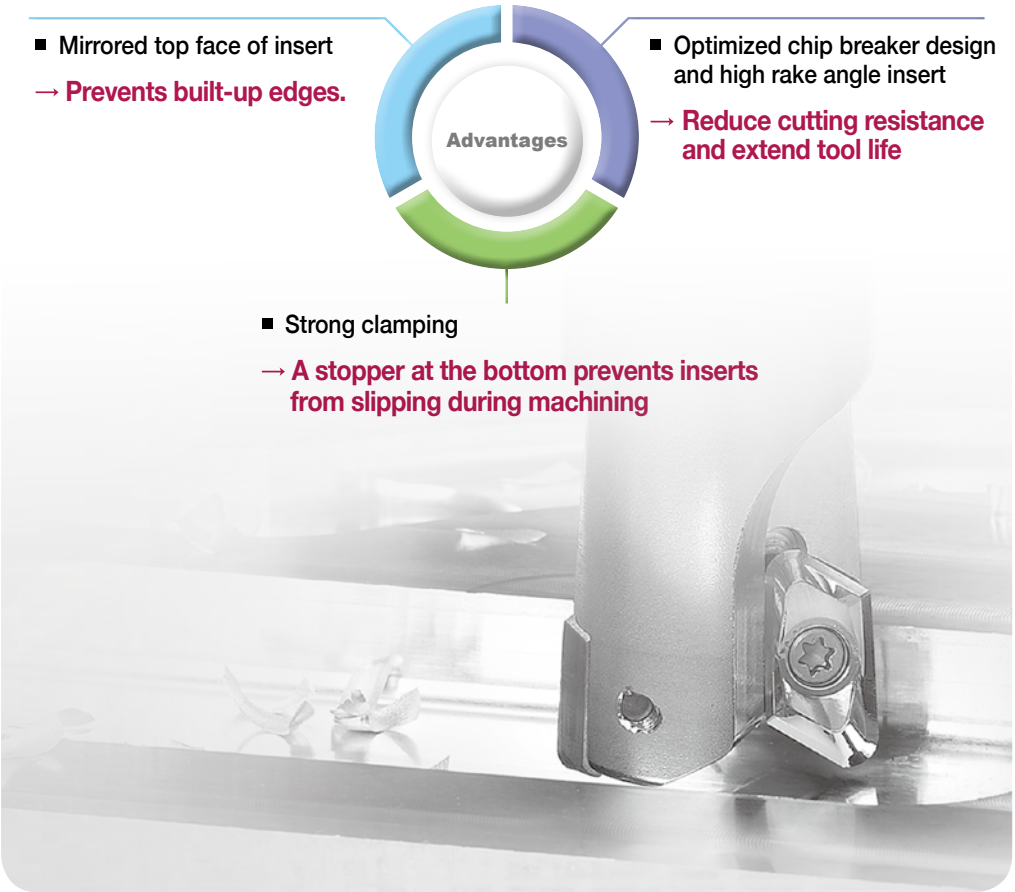
Aluminum is the third most abundant element in the Earth's crust, and is remarkable for its lightweight, and ability to resist corrosion. In its natural state aluminum has low hardness and has limited application for machinery parts. Many compounds are mixed to form an alloy with Al. The most common are Si, Cu, Mg, Ni, Mn, and others to make aluminum harder or stickier according to necessity.

These alloys are ductile metals and tend to cause built-up edges and poor chip control during machining, and are the main contributing factors to deteriorated tool life. KORLOY's Pro-X Mill reduces or eliminates these problems.

KORLOY Pro-X milling tool for aluminum, uses inserts with a buffed top face to achieve a mirror finish and avoid any chip sticking even at the high temperatures produced by aluminum cutting. Similarly, high rake cutting edges were engineered for better chip low and low cutting resistance, which significantly extend tool life and produce high-quality surface finishes.

The **Pro-X Mill** features a concave shape on the insert bottom, which functions as a stopper to prevent the inserts from being dispersed. The high rake angle Pro-X Mill inserts were specially designed for general aluminum milling applications, with insert depth of cut variations of max. ap 0.748inch and 0.984inch.

KORLOY's Pro-X Mill is the best choice for solving unstable tool life problems associated with built-up edge and poor chip control when machining aluminum compounds.



Features

- Strong Clamping due to the Concave Design of Insert Bottom
- Good chip flow and reduced built-up edge achieved by the insert's buffed surface
- High rake angle of insert provides good surface finish and low cutting load
- Specially designed for high speed machining of aluminum
- Suitable for square shouldering and curved surface machining

Code System

[Cutter / Shank type]

PAX	C	A	5	250	H	R	-	A
Pro-X Mill series	Tool type C : Cutter S : Shank M : Modular	Arbor type M : Metric A : Inch	Insert I/C 5 : 19 size insert 6 : 25 size insert	Tool diameter ISO : mm ANSI : inch	Coolant type H : Thru-hole Unmarked : No thru-hole	Hand of tool R : Right L : Left		Nose R A : 0.016~0.126 B : 0.157~0.197

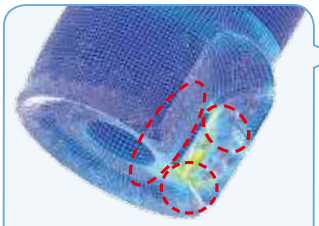
[Modular type]

PAX	M	A	5	125	H	R	-	A	-	M16
Pro-X Mill series	Tool type M : Modular	Arbor type M : Metric A : Inch	Insert I/C 5 : 19 size insert	Tool diameter ISO : mm ANSI : inch	Coolant type H : Thru-hole Unmarked : No thru-hole	Hand of tool R : Right L : Left		Nose R A : 0.016~0.126 B : 0.157~0.197		Screw Size

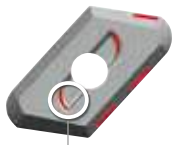
[Modular Adaptors]

MAT	M10	394	S075	S	C	[787]
Modular Adaptor	Scew Size	Neck Length	Shank dia(ø)	Neck Shape S : Straight T : Taper	Shank Material S : Steel C : Carbide	Shank Length

Clamping System for High Speed



- Clamping design as per FEM analysis
- Strong clamping of insert



Special design for strong clamping that prevents inserts from being dispersed in high speed machining

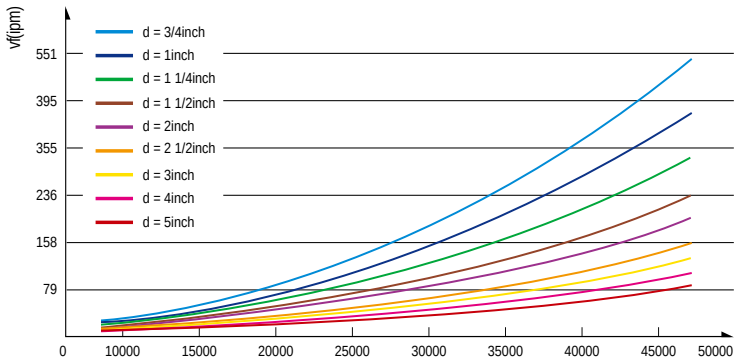
3-dimensional chip breaker design for low cutting load

Various insert corner radii are available (R0.016 ~ R0.197)

Centrifugal Force as per RPM

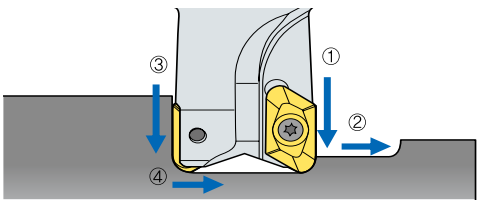
[Marking]

- Designation
- Max. RPM



※ Screw Torque = 4N•m ※ Indexable insert : 6.8g

Plunging, Slotting, Drilling Technical Data



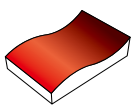
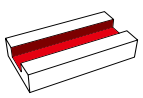
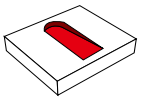
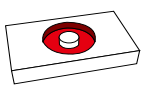
1. When drilling or grooving, follow the machining sequence in the pic.
   ① → ② → ③ → ④
2. When drilling or grooving, decrease the feed and cutting speed 30% ~ 50% from the recommended data

• Cutting Condition for Drilling

Holder	ap(inch)	
	5000 Type	6000 Type
Ø3/4	0.315	-
Ø1	0.157	0.433
Ø1 1/4	0.157	0.236
Ø1 1/2~5	0.157	0.236

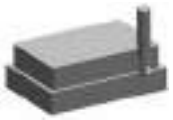
Insert	ap(inch)
XETK19	0.157
XETK25	0.236

Available Milling Applications

Copying	Slotting & Shouldering	Ramping	Hellcal Cutting
			

Application Examples

PAXSA5125HR-A



Workpiece	Cutting condition			
	vc(sfm)	fz(ipt)	ap(inch)	ae(inch)
A6061	4290	0.008	0.32	0.5D

Chip evacuation and good surface roughness

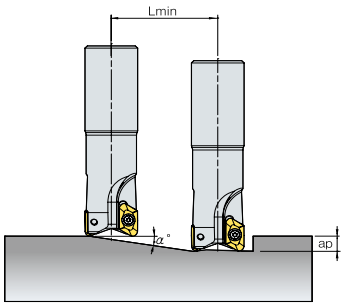
PAXCA5200HR-A

Workpiece	Cutting condition			
	vc(sfm)	fz(ipt)	ap(inch)	ae(inch)
A6061	4290	0.01	0.4	0.5D

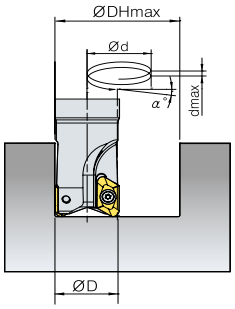
Long tool life and no built-up edge & chipping

Pro-X Mill Ramping & Helical Cutting Technical Data

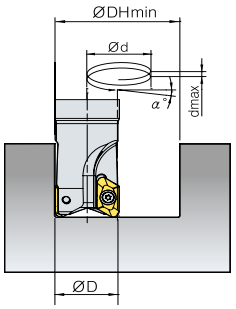
1. Ramping



2. Blind-hole helical cutting



3. Through-hole helical cutting



(inch)

Designation	ØD	Ramping		Blind-hole helical cutting				Through-hole helical cutting	
		α°(max)	Lmin	ØDHmax	dmax	ØDHmax	dmax	ØDHmax	dmax
PAXSA5075HR	0.75	9.1	2.47	1.264	0.008	1.185	0.007	0.988	0.006
PAXSA5100HR	1.00	11.9	1.86	1.764	0.015	1.685	0.014	1.488	0.012
PAXSA5125HR	1.25	9.0	2.49	2.264	0.014	2.185	0.014	1.988	0.012
PAXSA5150HR	1.50	7.2	3.11	2.764	0.014	2.685	0.013	2.488	0.012
PAXCA5200HR	2.00	5.2	4.36	3.764	0.013	3.685	0.013	3.488	0.012
PAXCA5250HR	2.50	4.0	5.61	4.764	0.013	4.685	0.013	4.488	0.012
PAXCA5300HR	3.00	3.3	6.86	5.764	0.013	5.685	0.013	5.488	0.012
PAXCA5400HR	4.00	2.4	9.36	7.764	0.013	7.685	0.013	7.488	0.012
PAXCA5500HR	5.00	1.9	11.86	9.764	0.013	9.685	0.013	9.488	0.012
PAXSA6100HR	1.00	9.0	2.48	1.764	0.011	1.685	0.011	1.488	0.009
PAXSA6125HR	1.25	6.8	3.31	2.264	0.011	2.185	0.010	1.988	0.009
PAXSA6150HR	1.50	10.8	2.07	2.764	0.021	2.685	0.020	2.488	0.019
PAXCA6200HR	2.00	7.7	2.91	3.764	0.020	3.685	0.020	3.488	0.019
PAXCA6250HR	2.50	6.0	3.74	4.764	0.020	4.685	0.019	4.488	0.019
PAXCA6300HR	3.00	4.9	4.57	5.764	0.020	5.685	0.019	5.488	0.019
PAXCA6400HR	4.00	3.6	6.24	7.764	0.019	7.685	0.019	7.488	0.019
PAXCA6500HR	5.00	2.9	7.91	9.764	0.019	9.685	0.019	9.488	0.019

• Lmin : when ap=0.394inch

• Lmin : Minimum inclination cutting length
α° : Max. rampig angle
ap : Depth of cut

$$Lmin = \frac{ap}{\tan \alpha^{\circ}} \text{ (inch)}$$

Pro-X Mill

Max. RPM as per Cutting Diameter

Cutting diameter ØD(inch)	5000 type		6000 type	
	n(min^{-1})	vc(sfm)	n(min^{-1})	vc(sfm)
3/4	14,000	879	-	-
1	28,000	2,199	15,000	1,178
1 1/4	25,000	2,513	23,000	2,312
1 1/2	22,000	2,764	20,000	2,513
2	20,000	3,141	18,000	2,827
2 1/2	18,000	3,562	16,000	3,166
3	16,000	4,021	14,000	3,518
4	14,000	4,398	13,000	4,084
5	13,000	5,105	11,000	4,319

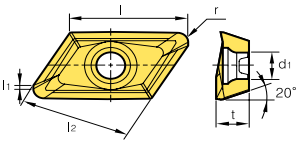
* In case of actual machining, accidental insert or tool breakage could happen even under the written RPM. A special cover or door is necessary to prevent damage from broken insert or broken tool.

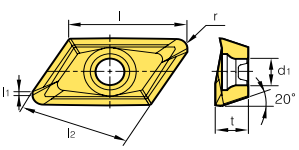
Recommended Cutting Conditions

Workpiece		Cutting Speed vc(sfm)	Feed fz(ipt)
Aluminum alloy	Rm280 < MPa	3,960	0.012
	Rm280 > MPa	3,300	0.010
Copper alloy	Long chipping	1,320	0.008
Thermo plastic	-	1,150	0.006
Aluminum alloy	Si <12%	3,300	0.010
	Si ≥12%	990	0.009
Copper alloy	Short chipping	1,650	0.008
Magnesium alloy	-	1,480	0.008
Duroplastics	-	680	0.006

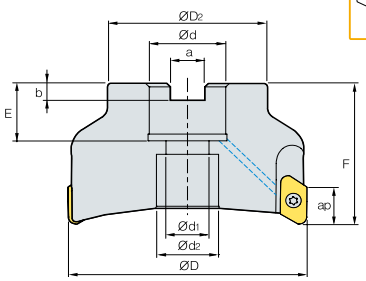
Inserts

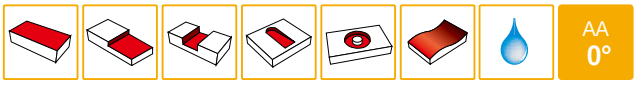
(inch)

Insert shape	Designation		Coated	Uncoated		Dimensions (inch)						Geometries
			PD2000	H01	H05	l	l_2	l_1	t	r	d_1	
	XEKT	19M504FR-MA	●	●		0.709	0.646	0.055	0.197	0.016	0.173	
		19M508FR-MA	●	●		0.709	0.646	0.039	0.197	0.031	0.173	
		19M512FR-MA	●	●		0.709	0.646	0.024	0.197	0.047	0.173	
		19M516FR-MA		●		0.689	0.646	0.020	0.197	0.063	0.173	
		19M518FR-MA				0.689	0.646	0.020	0.197	0.071	0.173	
		19M520FR-MA	●	●		0.689	0.646	0.020	0.197	0.079	0.173	
		19M530FR-MA		●		0.669	0.646	0.028	0.197	0.118	0.173	
		19M532FR-MA	●	●		0.669	0.646	0.020	0.197	0.126	0.173	
		19M540FR-MA	●	●		0.650	0.646	0.020	0.197	0.157	0.173	
		19M550FR-MA	●	●		0.630	0.646	0.016	0.197	0.197	0.173	
		250604FR-MA		●		0.965	0.862	0.059	0.250	0.016	0.236	
		250608FR-MA		●		0.965	0.862	0.047	0.250	0.031	0.236	
		250612FR-MA		●		0.965	0.862	0.031	0.250	0.047	0.236	
		250616FR-MA				0.965	0.862	0.016	0.250	0.063	0.236	
		250620FR-MA		●		0.945	0.862	0.020	0.250	0.079	0.236	
		250630FR-MA				0.933	0.862	0.024	0.250	0.118	0.236	
		250632FR-MA		●		0.933	0.862	0.016	0.250	0.126	0.236	
		250640FR-MA				0.898	0.862	0.047	0.250	0.157	0.236	
		250650FR-MA		●		0.894	0.862	0.016	0.250	0.197	0.236	

Insert shape	Designation		Coated	Dimensions (inch)						Geometries
			PC5300	l	l_2	l_1	t	r	d_1	
 For titanium	XEKT	19M504ER-ML		0.709	0.646	0.055	0.197	0.016	0.173	
		19M508ER-ML		0.709	0.646	0.039	0.197	0.031	0.173	
		19M512ER-ML		0.709	0.646	0.024	0.197	0.047	0.173	
		19M516ER-ML		0.689	0.646	0.020	0.197	0.063	0.173	
		19M518ER-ML		0.689	0.646	0.020	0.197	0.071	0.173	
		19M520ER-ML		0.689	0.646	0.020	0.197	0.079	0.173	
		19M530ER-ML		0.669	0.646	0.028	0.197	0.118	0.173	
		19M532ER-ML		0.669	0.646	0.020	0.197	0.126	0.173	
		19M540ER-ML		0.650	0.646	0.020	0.197	0.157	0.173	
		19M550ER-ML		0.630	0.646	0.016	0.197	0.197	0.173	
		250604ER-ML		0.965	0.862	0.059	0.250	0.016	0.236	
		250608ER-ML		0.965	0.862	0.047	0.250	0.031	0.236	
		250612ER-ML		0.965	0.862	0.031	0.250	0.047	0.236	
		250616ER-ML		0.965	0.862	0.016	0.250	0.063	0.236	
		250620ER-ML		0.945	0.862	0.020	0.250	0.079	0.236	
		250630ER-ML		0.933	0.862	0.024	0.250	0.118	0.236	
		250632ER-ML		0.933	0.862	0.016	0.250	0.126	0.236	
		250640ER-ML		0.898	0.862	0.047	0.250	0.157	0.236	
		250650ER-ML		0.894	0.862	0.016	0.250	0.197	0.236	

PAXCA5000





AA 0°

- AR : 8°~ 17.5°
- RR : -9.5°~ -5°

(inch)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	Max rpm	ap	lbs
PAXCA	5150HR-A,B	3	1.5	1.417	0.50	0.287	0.433	0.252	0.169	0.630	1.50	25,800	0.67	0.15
	5200HR-A,B	4	2.0	1.772	0.75	0.416	0.630	0.315	0.220	0.787	1.75	23,000	0.67	0.30
	5250HR-A,B	A:5, B:4	2.5	1.772	0.75	0.416	0.630	0.315	0.220	0.787	1.75	20,500	0.67	0.56
	5300HR-A,B	5	3.0	2.205	1.00	0.551	0.827	0.374	0.248	0.866	2.00	18,200	0.67	1.00
	5400HR-A,B	6	4.0	3.386	1.50	0.827	1.220	0.626	0.394	1.181	2.50	16,300	0.67	2.30
	5500HR-A,B	7	5.0	3.386	1.50	0.827	1.220	0.626	0.394	1.181	2.50	14,600	0.67	3.20

• A type : Insert NoseR 0.016 ~ 0.126 • B type : Insert NoseR 0.157 ~ 0.197

Available Inserts

XEKT-MA

XEKT-ML

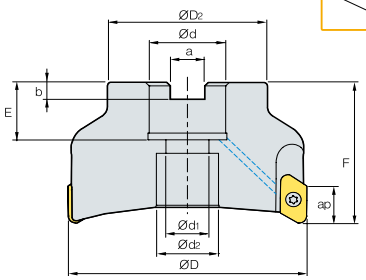
Designation		Coated	Uncoated		Designation		Coated
		PD2000	H01	H05			PC5300
XEKT	19M504FR-MA	●	●		XEKT	19M504ER-ML	
	19M508FR-MA	●	●			19M508ER-ML	
	19M512FR-MA	●	●			19M512ER-ML	
	19M516FR-MA		●			19M516ER-ML	
	19M518FR-MA					19M518ER-ML	
	19M520FR-MA	●	●			19M520ER-ML	
	19M530FR-MA		●			19M530ER-ML	
	19M532FR-MA	●	●			19M532ER-ML	
	19M540FR-MA	●	●			19M540ER-ML	
	19M550FR-MA	●	●			19M550ER-ML	

● : Stock item

Parts

Specification	Screw	Wrench
		
Ø1.5 ~ Ø5.0	PTKA0408	TW15S

PAXCA6000



AA 0°

- AR : 8°~ 17.5°
- RR : -9.5°~ -5°

(inch)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	Max rpm	ap	lbs
PAXCA	6200HR-A,B	2	2.0	1.772	0.75	0.416	0.433	0.315	0.220	0.787	1.75	23,000	0.91	0.32
	6250HR-A,B	3	2.5	1.772	0.75	0.416	0.630	0.315	0.220	0.787	1.75	20,500	0.91	0.53
	6300HR-A,B	4	3.0	2.205	1.00	0.551	1.260	0.374	0.236	0.866	2.00	18,200	0.91	0.73
	6400HR-A,B	5	4.0	2.874	1.25	0.709	1.024	0.510	0.319	0.866	2.50	16,300	0.91	1.70
	6500HR-A,B	6	5.0	3.386	1.50	0.827	1.220	0.626	0.394	1.181	2.50	14,600	0.91	3.06

• A type : Insert NoseR 0.016 ~ 0.126 • B type : Insert NoseR 0.157 ~ 0.197

Available Inserts

XEKT-MA

XEKT-ML

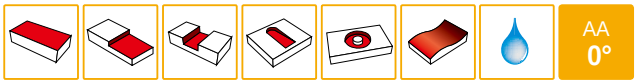
Designation		Coated	Uncoated		Designation		Coated
		PD2000	H01	H05			PC5300
XEKT	250604FR-MA		●		XEKT	250604ER-ML	
	250608FR-MA		●			250608ER-ML	
	250612FR-MA		●			250612ER-ML	
	250616FR-MA					250616ER-ML	
	250620FR-MA		●			250620ER-ML	
	250630FR-MA					250630ER-ML	
	250632FR-MA		●			250632ER-ML	
	250640FR-MA					250640ER-ML	
	250650FR-MA		●			250650ER-ML	

● : Stock item

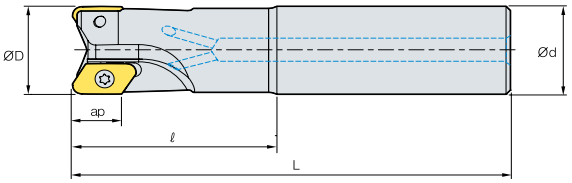
Parts

Specification	Screw	Wrench
		
Ø2.0 ~ Ø5.0	FTGA0513-P	TW20-100

PAXSA5000



• AR : 5°~ 10°
• RR : -14°~ -5°



(inch)

Designation		⦶	ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	Max rpm	ap	lbs
PAXSA	5150HR-A,B	3	1.5	1.417	0.50	0.287	0.433	0.252	0.169	0.630	1.50	25,800	0.67	0.15
	5200HR-A,B	4	2.0	1.772	0.75	0.416	0.630	0.315	0.220	0.787	1.75	23,000	0.67	0.30
	5250HR-A,B	A:5, B:4	2.5	1.772	0.75	0.416	0.630	0.315	0.220	0.787	1.75	20,500	0.67	0.56
	5300HR-A,B	5	3.0	2.205	1.00	0.551	0.827	0.374	0.248	0.866	2.00	18,200	0.67	1.00
	5400HR-A,B	6	4.0	3.386	1.50	0.827	1.220	0.626	0.394	1.181	2.50	16,300	0.67	2.30
	5500HR-A,B	7	5.0	3.386	1.50	0.827	1.220	0.626	0.394	1.181	2.50	14,600	0.67	3.20

• A type : Insert NoseR 0.016 ~ 0.126 • B type : Insert NoseR 0.157 ~ 0.197

Available Inserts

XEKT-MA

XEKT-ML

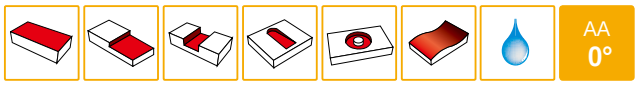
Designation		Coated	Uncoated		Designation		Coated
		PD2000	H01	H05			PC5300
XEKT	19M504FR-MA	●	●		XEKT	19M504ER-ML	
	19M508FR-MA	●	●			19M508ER-ML	
	19M512FR-MA	●	●			19M512ER-ML	
	19M516FR-MA		●			19M516ER-ML	
	19M518FR-MA					19M518ER-ML	
	19M520FR-MA	●	●			19M520ER-ML	
	19M530FR-MA		●			19M530ER-ML	
	19M532FR-MA	●	●			19M532ER-ML	
	19M540FR-MA	●	●			19M540ER-ML	
	19M550FR-MA	●	●			19M550ER-ML	

● : Stock item

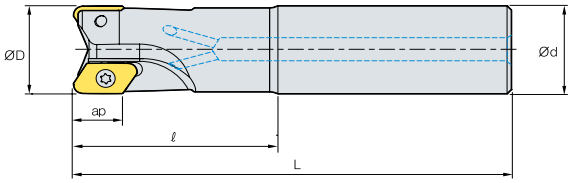
Parts

Specification	Screw	Wrench
		
Ø0.75 ~ Ø1.50	PTKA0408	TW15S

PAXSA6000



• AR : 5°~ 10°
• RR : -14°~ -5°



(inch)

Designation		⦾	ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	Max rpm	ap	lbs
PAXSA	6200HR-A,B	2	2.0	1.772	0.75	0.416	0.433	0.315	0.220	0.787	1.75	23,000	0.91	0.32
	6250HR-A,B	3	2.5	1.772	0.75	0.416	0.630	0.315	0.220	0.787	1.75	20,500	0.91	0.53
	6300HR-A,B	4	3.0	2.205	1.00	0.551	1.260	0.374	0.236	0.866	2.00	18,200	0.91	0.73
	6400HR-A,B	5	4.0	2.874	1.25	0.709	1.024	0.510	0.319	0.866	2.50	16,300	0.91	1.70
	6500HR-A,B	6	5.0	3.386	1.50	0.827	1.220	0.626	0.394	1.181	2.50	14,600	0.91	3.06

• A type : Insert NoseR 0.016 ~ 0.126 • B type : Insert NoseR 0.157 ~ 0.197

Available Inserts

XEKT-MA

XEKT-ML

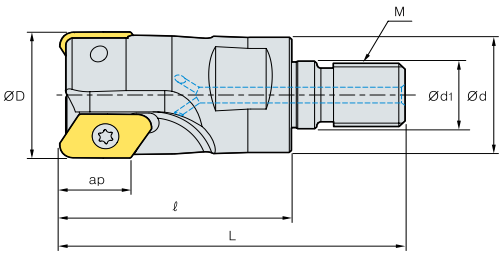
Designation		Coated	Uncoated		Designation		Coated
		PD2000	H01	H05			PC5300
XEKT	250604FR-MA		●		XEKT	250604ER-ML	
	250608FR-MA		●			250608ER-ML	
	250612FR-MA		●			250612ER-ML	
	250616FR-MA					250616ER-ML	
	250620FR-MA		●			250620ER-ML	
	250630FR-MA					250630ER-ML	
	250632FR-MA		●			250632ER-ML	
	250640FR-MA					250640ER-ML	
	250650FR-MA		●			250650ER-ML	

● : Stock item

Parts

Specification	Screw	Wrench
Ø1.00 ~ Ø1.50	FTGA0510-P (Ø1.00~Ø1.25) FTGA0513-P (Ø1.50)	TW20-100

PAXMA5000



AA
0°

- AR : 6°~ 8°
- RR : -7°~ -5°

(inch)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	lbs
PAXMA	5100HR-A,B-M12	2	1.00	0.906	0.492	2.165	3.110	M12	0.67	0.12
	5125HR-A,B-M16	2	1.25	1.142	0.669	2.165	3.228	M16	0.67	0.24
	5150HR-A,B-M16	3	1.50	1.142	0.669	2.165	3.228	M16	0.67	0.32

• A type : Insert NoseR 0.016 ~ 0.126 • B type : Insert NoseR 0.157 ~ 0.197

Available Inserts

XEKT-MA

XEKT-ML

Designation		Coated	Uncoated		Designation		Coated
		PD2000	H01	H05			PC5300
XEKT	19M504FR-MA	●	●		XEKT	19M504ER-ML	
	19M508FR-MA	●	●			19M508ER-ML	
	19M512FR-MA	●	●			19M512ER-ML	
	19M516FR-MA		●			19M516ER-ML	
	19M518FR-MA					19M518ER-ML	
	19M520FR-MA	●	●			19M520ER-ML	
	19M530FR-MA		●			19M530ER-ML	
	19M532FR-MA	●	●			19M532ER-ML	
	19M540FR-MA	●	●			19M540ER-ML	
	19M550FR-MA	●	●			19M550ER-ML	

● : Stock item

Available Adaptors

Designation		Available Adaptor
PAXMA	5100HR-A,B-M12	MATA - M12
	5125HR-A,B-M16	MATA - M16
	5150HR-A,B-M16	

Designation : PAXMA5125HR-M16
Modular Head Threading Measure size(M16)

II

Adaptor Spec. : MATA-M16-354-S125S-C
Adaptor Threading Measure(M16)

Parts

Specification	Screw	Wrench
Ø1.00 ~ Ø1.50	PTKA0407	TW15S
	PTKA0408	

MATA (Steel Shank type)

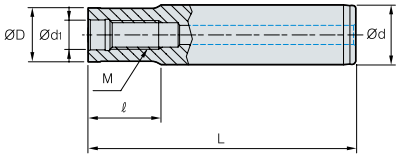


Fig. 1

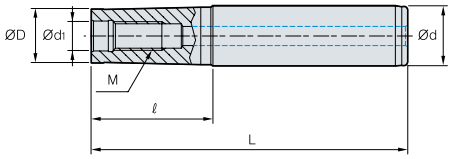


Fig. 2

(inch)

Designation		ØD	Ød	Ød1	ℓ	L	M	Fig.
MATA-	M06-078-S038S	0.354	3/8	0.256	0.787	2.756	M06	1
	M06-157-S050T	0.354	1/2	0.256	1.575	3.780	M06	1
	M06-255-S063T	0.354	5/8	0.256	2.559	4.921	M06	1
	M6B-078-S050S	0.433	1/2	0.256	0.787	2.992	M06	1
	M6B-157-S050S	0.433	1/2	0.256	1.575	3.780	M06	1
	M6B-255-S063T	0.433	5/8	0.256	2.559	4.921	M06	1
	M6B-315-S063T	0.433	5/8	0.256	3.150	5.512	M06	1
	M08-078-S063S	0.571	5/8	0.335	0.787	3.150	M08	2
	M08-157-S063T	0.571	5/8	0.335	1.575	3.937	M08	2
	M08-255-S063T	0.571	5/8	0.335	2.559	4.921	M08	2
	M08-315-S075T	0.571	3/4	0.335	3.150	5.906	M08	2
	M08-433-S100T	0.571	1	0.335	4.331	7.480	M08	2
	M10-118-S075S	0.689	3/4	0.413	1.181	3.937	M10	2
	M10-196-S075T	0.689	3/4	0.413	1.969	4.724	M10	2
	M10-275-S075T	0.689	3/4	0.413	2.756	5.512	M10	2
	M10-354-S100T	0.689	1	0.413	3.543	6.693	M10	2
	M10-433-S100T	0.689	1	0.413	4.331	7.480	M10	2
	M10-511-S125T	0.689	1 1/4	0.413	5.118	8.661	M10	2
	M12-118-S100S	0.906	1	0.492	1.181	4.331	M12	2
	M12-196-S100T	0.906	1	0.492	1.969	5.118	M12	2
	M12-275-S100T	0.906	1	0.492	2.756	5.906	M12	2
	M12-354-S100T	0.906	1	0.492	3.543	6.693	M12	2
	M12-433-S125T	0.906	1 1/4	0.492	4.331	7.874	M12	2
	M12-689-S150T	0.906	1 1/2	0.492	6.890	11.811	M12	2
	M16-137-S125S	1.142	1 1/4	0.669	1.378	4.921	M16	2
	M16-216-S125T	1.142	1 1/4	0.669	2.165	5.709	M16	2
	M16-315-S125T	1.142	1 1/4	0.669	3.150	6.693	M16	2
	M16-472-S125T	1.142	1 1/4	0.669	4.724	8.268	M16	2
	M16-689-S150T	1.142	1 1/2	0.669	6.890	11.811	M16	2

- S : Straight Neck Adapter
- T : Taper Neck Adapter

MATA-C (Carbide Shank type)

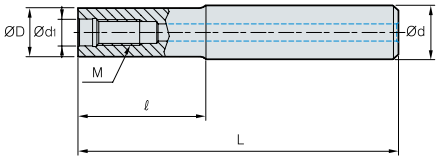


Fig. 1

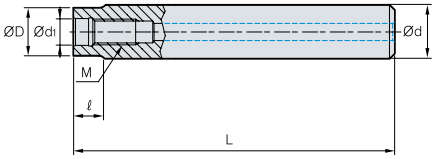


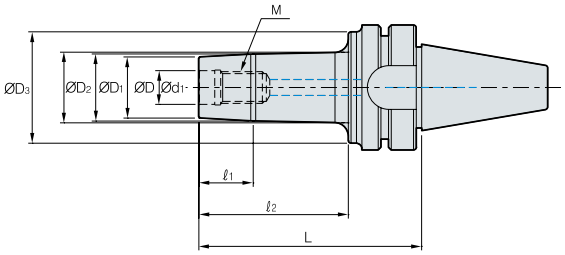
Fig. 2

(inch)

	Designation	ØD	Ød	Ød1	ℓ	L	M	Fig
MATA-	M06-118-S039S-C-315	0.374	0.394	0.256	1.181	3.150	M06	1
	M06-196-S039S-C-393	0.374	0.394	0.256	1.969	3.937	M06	1
	M06-315-S039S-C-511	0.374	0.394	0.256	3.150	5.118	M06	1
	M06B-118-S039S-C-315	0.433	0.394	0.256	1.181	3.150	M06	1
	M06B-196-S039S-C-393	0.433	0.394	0.256	1.969	3.937	M06	1
	M06B-315-S039S-C-511	0.433	0.394	0.256	3.150	5.118	M06	1
	M08-315-S063S-C	0.571	5/8	0.335	3.150	5.906	M08	1
	M08-433-S063S-C	0.571	5/8	0.335	4.331	7.087	M08	1
	M08-590-S063S-C	0.571	5/8	0.335	5.906	9.843	M08	1
	M08-394-S063S-C-590	0.571	5/8	0.335	0.394	5.906	M08	2
	M08-394-S063S-C-708	0.571	5/8	0.335	0.394	7.087	M08	2
	M08-394-S063S-C-984	0.571	5/8	0.335	0.394	9.843	M08	2
	M10-354-S075S-C	0.689	3/4	0.413	3.543	6.693	M10	1
	M10-433-S075S-C	0.689	3/4	0.413	4.331	7.874	M10	1
	M10-689-S075S-C	0.689	3/4	0.413	6.890	11.811	M10	1
	M10-394-S075S-C-669	0.689	3/4	0.413	0.394	6.693	M10	2
	M10-394-S075S-C-787	0.689	3/4	0.413	0.394	7.874	M10	2
	M10-394-S075S-C-1181	0.689	3/4	0.413	0.394	11.811	M10	2
	M12-354-S100S-C	0.906	1	0.492	3.543	6.693	M12	1
	M12-433-S100S-C	0.906	1	0.492	4.331	7.874	M12	1
	M12-689-S100S-C	0.906	1	0.492	6.890	11.811	M12	1
	M12-059-S100S-C-669	0.906	1	0.492	0.591	6.693	M12	2
	M12-059-S100S-C-787	0.906	1	0.492	0.591	7.874	M12	2
	M12-059-S100S-C-1181	0.906	1	0.492	0.591	11.811	M12	2
	M16-354-S125S-C	1.142	1 1/4	0.669	3.543	7.087	M16	1
	M16-472-S125S-C	1.142	1 1/4	0.669	4.824	8.268	M16	1
	M16-689-S125S-C	1.142	1 1/4	0.669	6.890	11.811	M16	1
	M16-078-S125S-C-708	1.142	1 1/4	0.669	0.787	70.87	M16	2
	M16-078-S125S-C-826	1.142	1 1/4	0.669	0.787	8.268	M16	2
	M16-078-S125S-C-1181	1.142	1 1/4	0.669	0.787	11.811	M16	2

Pro-X Mill

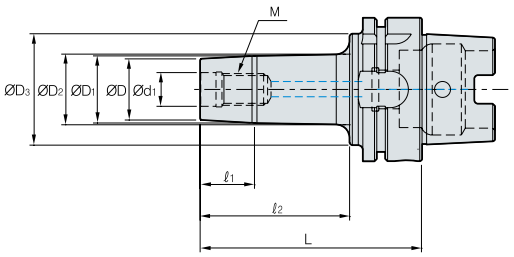
BT30 / BT40 / BT50



(inch)

Designation		ØD	ØD1	ØD2	ØD3	Ød1	ℓ1	ℓ2	L	M
BT30-	MAT-M06-053	0.433	0.461	0.512	1.181	0.256	0.197	0.827	2.087	06
	MAT-M08-057	0.571	0.618	0.689	1.378	0.335	0.276	0.984	2.244	08
	MAT-M10-062	0.709	0.776	0.945	1.496	0.413	0.276	1.181	2.441	10
	MAT-M12-067	0.906	0.972	1.083	1.614	0.492	0.394	1.378	2.638	12
	MAT-M16-067	1.142	1.248	1.319	1.614	0.669	0.394	1.378	2.638	16
BT40-	MAT-M06-062	0.433	0.461	0.551	1.575	0.256	0.197	0.984	2.441	08
	MAT-M06-077	0.433	0.461	0.551	1.575	0.256	0.197	1.575	3.031	06
	MAT-M06-092	0.433	0.461	0.551	1.575	0.256	0.197	2.165	3.622	06
	MAT-M08-067	0.571	0.618	0.748	1.732	0.335	0.276	1.181	2.638	08
	MAT-M08-082	0.571	0.618	0.748	1.732	0.335	0.276	1.772	3.228	08
	MAT-M08-097	0.571	0.618	0.748	1.732	0.335	0.276	2.362	3.819	08
	MAT-M10-072	0.709	0.776	0.906	1.969	0.413	0.394	1.378	2.835	10
	MAT-M10-087	0.709	0.776	0.906	1.969	0.413	0.394	1.969	3.425	10
	MAT-M10-102	0.709	0.776	0.906	1.969	0.413	0.394	2.559	4.016	10
	MAT-M12-077	0.906	0.972	1.181	2.165	0.492	0.394	1.575	3.031	12
	MAT-M12-092	0.906	0.972	1.181	2.165	0.492	0.512	2.165	3.622	12
	MAT-M12-107	0.906	0.972	1.181	2.165	0.492	0.512	2.756	4.213	12
	MAT-M16-077	1.142	1.248	1.457	2.165	0.669	0.512	1.575	3.031	16
	MAT-M16-092	1.142	1.248	1.457	2.165	0.669	0.512	2.165	3.622	16
	MAT-M16-107	1.142	1.248	1.457	2.165	0.669	0.512	2.756	4.213	16
BT50-	MAT-M06-083	0.433	0.461	0.591	1.575	0.256	0.197	1.378	3.268	06
	MAT-M06-098	0.433	0.461	0.591	1.575	0.256	0.197	1.969	3.858	06
	MAT-M06-113	0.433	0.461	0.591	1.575	0.256	0.197	2.559	4.449	06
	MAT-M08-088	0.571	0.618	0.787	1.772	0.335	0.276	1.575	3.465	08
	MAT-M08-103	0.571	0.618	0.787	1.772	0.335	0.276	2.165	4.055	08
	MAT-M08-118	0.571	0.618	0.787	1.772	0.335	0.276	2.756	4.646	08
	MAT-M10-093	0.709	0.776	0.984	2.165	0.413	0.394	1.772	3.661	10
	MAT-M10-113	0.709	0.776	0.984	2.165	0.413	0.394	2.559	4.449	10
	MAT-M10-128	0.709	0.776	0.984	2.165	0.413	0.394	3.150	5.039	10
	MAT-M12-103	0.906	0.972	1.299	2.559	0.492	0.394	2.165	4.055	12
	MAT-M12-118	0.906	0.972	1.299	2.559	0.492	0.512	2.756	4.646	12
	MAT-M12-133	0.906	0.972	1.299	2.559	0.492	0.512	3.346	5.236	12
	MAT-M16-103	1.142	1.248	1.614	3.346	0.669	0.512	2.165	4.055	16
	MAT-M16-118	1.142	1.248	1.614	3.346	0.669	0.512	2.756	4.646	16
	MAT-M16-133	1.142	1.248	1.614	3.346	0.669	0.512	3.346	5.236	16

HSK63A / HSK100A



(inch)

Designation		ØD	ØD1	ØD2	ØD3	Ød1	ℓ1	ℓ2	L	M
HSK63A-	MAT-M06-061	0.433	0.461	1.063	1.575	0.256	0.197	0.984	2.402	06
	MAT-M06-076	0.433	0.461	1.063	1.575	0.256	0.197	1.575	2.992	06
	MAT-M06-091	0.433	0.461	1.063	1.575	0.256	0.197	2.165	3.583	06
	MAT-M08-066	0.571	0.618	1.201	1.732	0.335	0.276	1.181	2.598	08
	MAT-M08-081	0.571	0.618	1.201	1.732	0.335	0.276	1.772	3.189	08
	MAT-M08-096	0.571	0.618	1.201	1.732	0.335	0.276	2.362	3.780	08
	MAT-M10-071	0.709	0.776	1.339	1.969	0.413	0.394	1.378	2.795	10
	MAT-M10-086	0.709	0.776	1.339	1.969	0.413	0.394	1.969	3.386	10
	MAT-M10-101	0.709	0.776	1.339	1.969	0.413	0.394	2.559	3.976	10
	MAT-M12-076	0.906	0.972	1.437	2.165	0.492	0.394	1.575	2.992	12
	MAT-M12-091	0.906	0.972	1.437	2.165	0.492	0.512	2.165	3.583	12
	MAT-M12-106	0.906	0.972	1.437	2.165	0.492	0.512	2.756	4.173	12
	MAT-M16-076	1.142	1.248	1.516	2.165	0.669	0.512	1.575	2.992	16
	MAT-M16-091	1.142	1.248	1.516	2.165	0.669	0.512	2.165	3.583	16
	MAT-M16-106	1.142	1.248	1.516	2.165	0.669	0.512	2.756	4.173	16
HSK100A-	MAT-M06-074	0.433	0.461	0.591	1.575	0.256	0.197	1.378	2.913	06
	MAT-M06-089	0.433	0.461	0.591	1.575	0.256	0.197	1.969	3.504	06
	MAT-M06-104	0.433	0.461	0.591	1.575	0.256	0.197	2.559	4.094	06
	MAT-M08-079	0.571	0.618	0.787	1.772	0.335	0.276	1.575	3.110	08
	MAT-M08-094	0.571	0.618	0.787	1.772	0.335	0.276	2.165	3.701	08
	MAT-M08-109	0.571	0.618	0.787	1.772	0.335	0.276	2.756	4.291	08
	MAT-M10-084	0.709	0.776	0.984	2.165	0.413	0.394	1.772	3.307	10
	MAT-M10-104	0.709	0.776	0.984	2.165	0.413	0.394	2.559	4.094	10
	MAT-M10-119	0.709	0.776	0.984	2.165	0.413	0.394	3.150	4.685	10
	MAT-M12-094	0.906	0.972	1.299	2.559	0.492	0.394	2.165	3.701	12
	MAT-M12-109	0.906	0.972	1.299	2.559	0.492	0.512	2.756	4.291	12
	MAT-M12-124	0.906	0.972	1.299	2.559	0.492	0.512	3.346	4.882	12
	MAT-M16-094	1.142	1.248	1.614	3.346	0.669	0.512	2.165	3.701	16
	MAT-M16-109	1.142	1.248	1.614	3.346	0.669	0.512	2.756	4.291	16
	MAT-M16-124	1.142	1.248	1.614	3.346	0.669	0.512	3.346	4.882	16

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